AIRLINK 101™

Super G Wireless Broadband Router

Model # AR420W

User's Manual

Ver. 1A

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1. Introduction

Congratulations on your purchase of this Super G Wireless Broadband Router. This product is specifically designed for Small Office and Home Office needs. It provides a complete SOHO solution for Internet surfing and is easy to configure and operate even for non-technical users. Instructions for installing and configuring this product can be found in this manual. Before you install and use this product, please read this manual carefully for proper operation of this product.

Basic Functions

- **NAT Routing**
  Connects multiple computers to a broadband (cable or DSL) modem to surf the Internet.
- **Auto-Sensing Ethernet Switch**
  Equipped with a 4-port auto-sensing Ethernet switch.
- **Firewall**
  All unwanted packets from outside intruders are blocked to protect your Intranet.
- **DHCP Server Supported**
  All of the networked computers can retrieve TCP/IP settings automatically from this product.
- **Web-Based Configuration**
  Configurable through any networked computer's web browser using Netscape or Internet Explorer.

Security Functions

- **VPN Pass-Through**
  Support VPN pass-through.
- **SPI Mode Supported**
  When SPI Mode is enabled, the router will check every incoming packet to determine if the packet is valid.

Advanced Functions

- **System Time Supported**
  - Allows you to synchronize the system time with a network time server.
- **UPNP (Universal Plug-and-Play) Supported**

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2. Connecting the Router

Note: Prior to connecting the router, be sure to power off your computer, DSL/Cable modem, and the router. You should setup the router with a wired connection first before attempting to setup any wireless connection.

Step 1 Connect one end of a network cable to the **Internet** port of the router and connect the other end of the cable to the DSL/Cable modem.

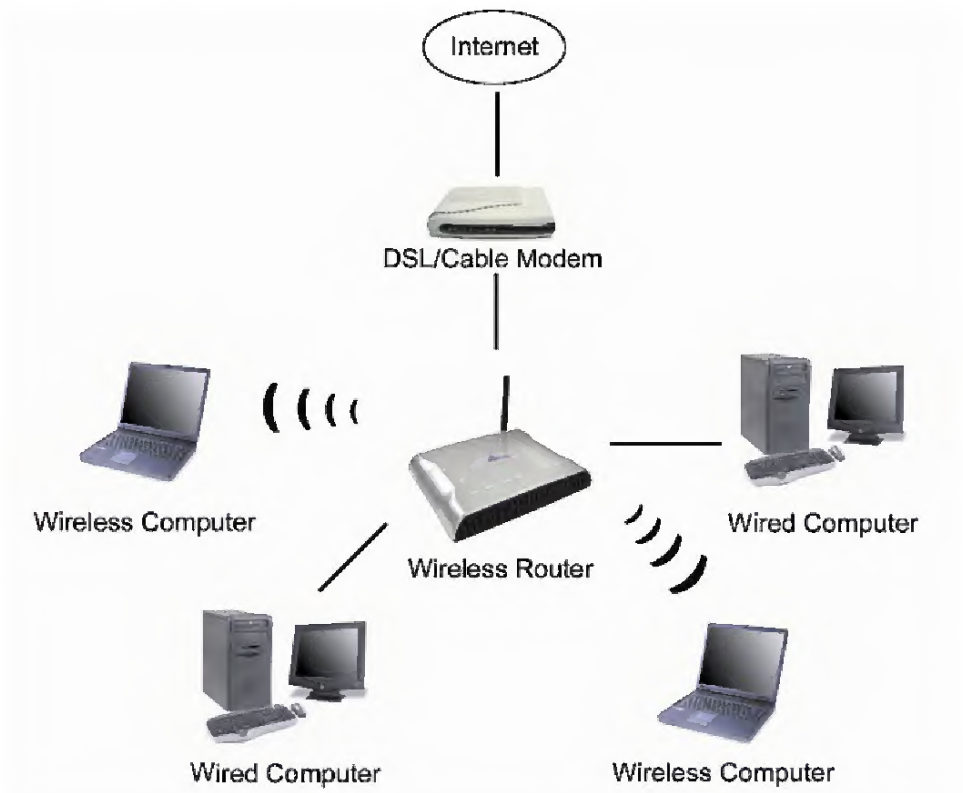
Step 2 With another network cable, connect one end of the cable to your computer's network card and connect the other end to one of the **LAN** ports of the router.

Step 3 Power on the DSL/Cable modem and wait for the lights on the modem to settle down.

Step 4 Power on the router by connecting one end of the supplied power adapter to the power jack of the router and connecting the other end to an electrical outlet.

Step 5 Power on your computer.

Step 6 Make sure the **Internet**, **Wireless**, and the **LAN** ports that the computer is connected to are lit. If not, try the above steps again.



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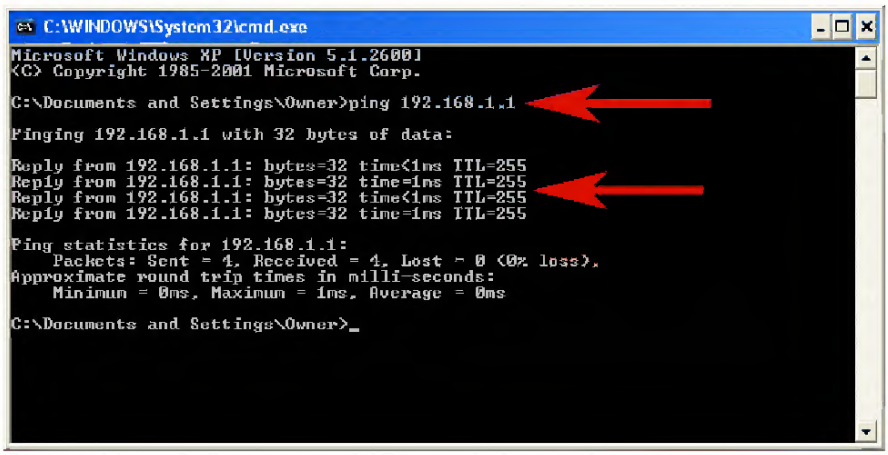
3. Verifying Connection to the Router

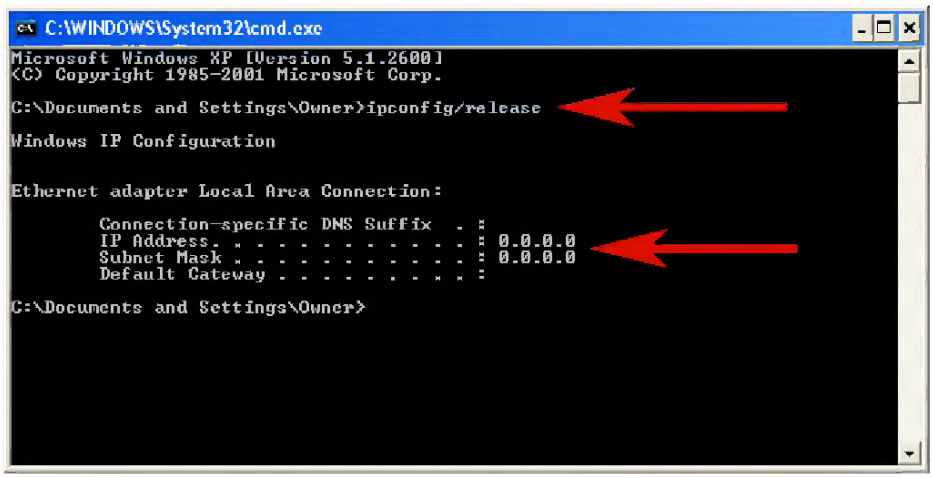
Step 1 Go to **Start**, **Run**, type **command** (for Windows 95/98/ME) or **cmd** (for Windows 2000/XP) and click **OK**. You will see the command prompt as below.

Step 2 Type **ping 192.168.1.1** and press **Enter**. You should get four reply responses back.


C:\WINDOWS\System32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
C:\Documents and Settings\Owner>ping 192.168.1.1
Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time=1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time=1ms TTL=255
Ping statistics for 192.168.1.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\Documents and Settings\Owner>_

Step 3 If you get **Request timed out**, or **Destination host unreachable**, double-check the network cable connection between the computer and the router and try **Step 2** again. If you still encounter problem, go to the next step; otherwise proceed to **Section 3, Configure the Router**.

Step 4 For Windows 2000/XP, type **ipconfig/release** and press **Enter**.


C:\WINDOWS\System32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
C:\Documents and Settings\Owner>ipconfig/release
Windows IP Configuration
Ethernet adapter Local Area Connection:
Connection-specific DNS Suffix . :
IP Address. . . . . : 0.0.0.0
Subnet Mask . . . . . : 0.0.0.0
Default Gateway . . . . . :
C:\Documents and Settings\Owner>

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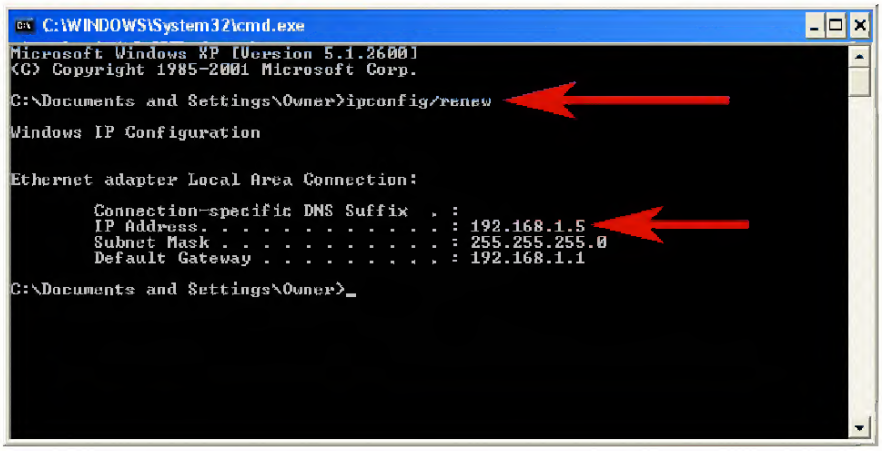
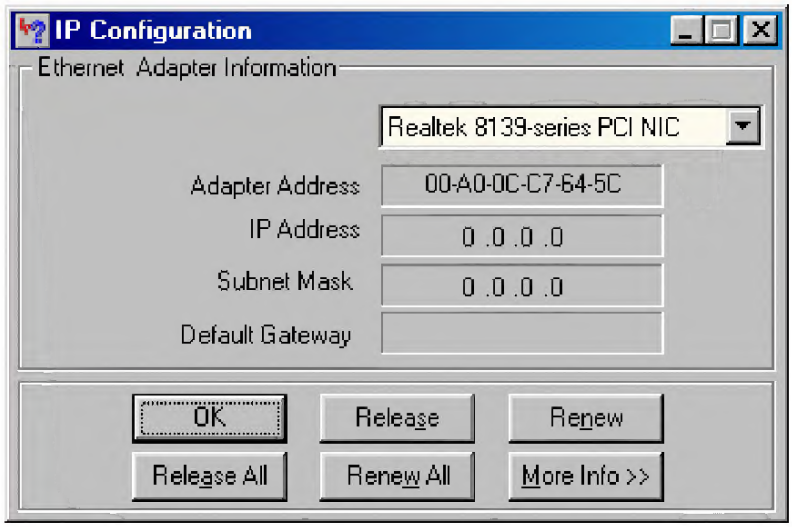
Step 5 Type **ipconfig/renew** and press **Enter**. You should get an IP address of **192.168.1.x** (where **x** is a number between 2 - 254). Proceed to **Section 3, Configure the Router.** If you don't get an IP address, reset the router by holding in the reset button at the back of the router for 10 seconds while it is ON and try **ipconfig/renew** again.


C:\WINDOWS\System32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
C:\Documents and Settings\Owner>ipconfig/renew
Windows IP Configuration
Ethernet adapter Local Area Connection:
Connection-specific DNS Suffix . :
IP Address. . . . . : 192.168.1.5
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.1.1
C:\Documents and Settings\Owner>

Step 6 For Windows 95/98/ME go to **Start**, **Run**, type **winipcfg** and click **OK**.

Step 7 Select your network card from the drop-down menu and click **Release**.



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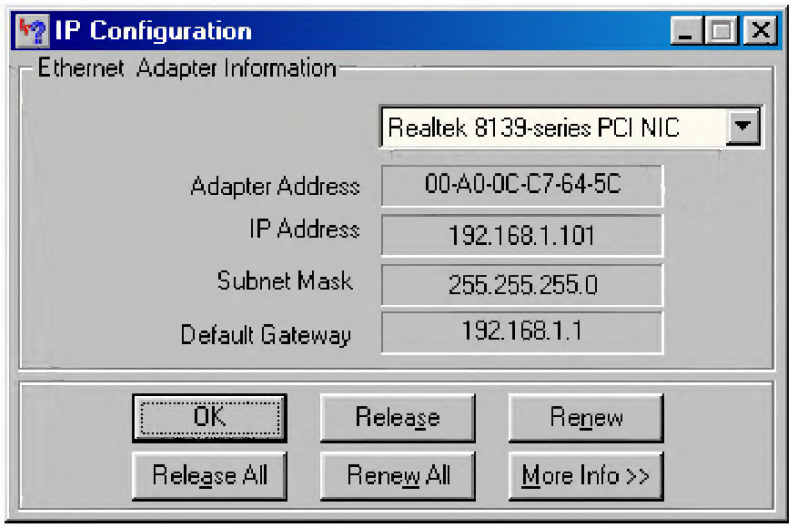
Step 8 After your IP address is released, click **Renew**. You should get an IP address of **192.168.1.x** (where **x** is a number between 2 - 254). If you don't get an IP address, reset the router by holding in the reset button at the back of the router for 10 seconds while it is ON and try **Renew** again.



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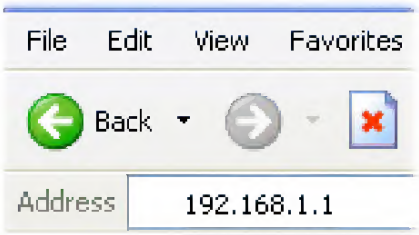
4. Configuring the Router

Step 1 Open the web browser and type **192.168.1.1** in the URL Address field and press **Enter**.



Step 2 Enter **admin** for both the username and password fields and click **OK**.

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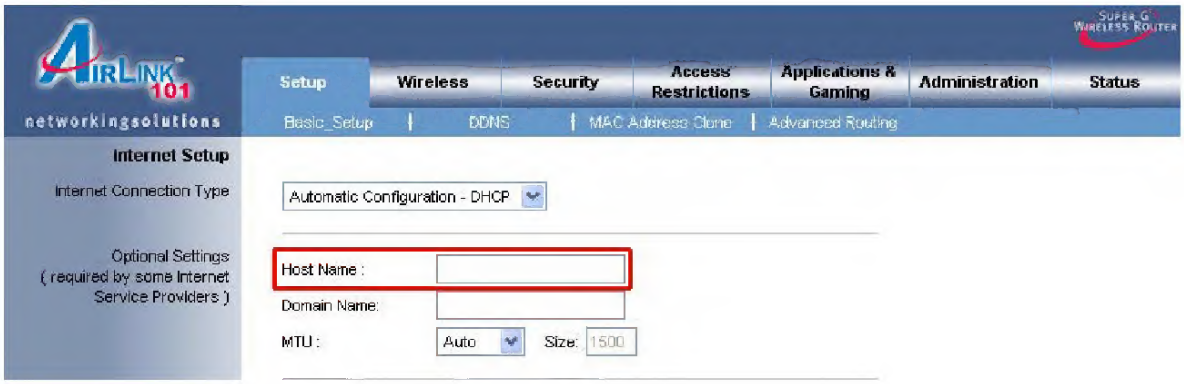
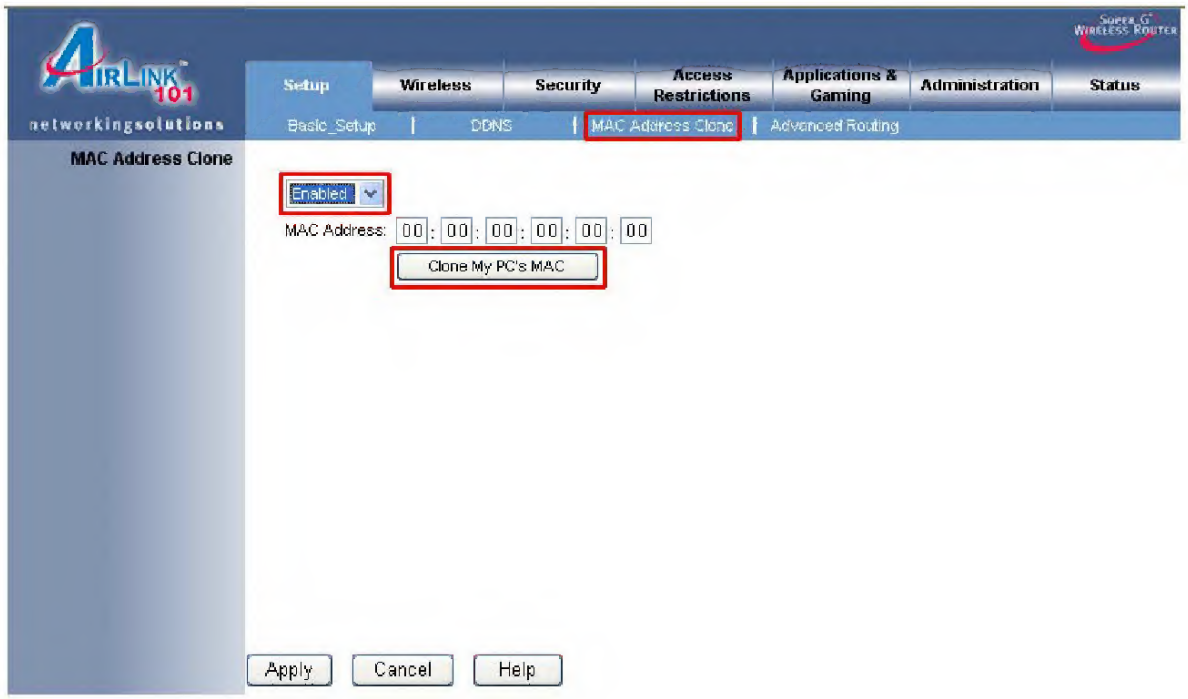
Cable Modem

For most cable modem users, you should be able to connect to the Internet without any configuration. If your ISP has provided you with a host name, enter it in the optional **Host Name** field. Click **Apply** and **OK** to save the setting.



If your ISP requires a registered MAC Address, click on the **MAC Address Clone** tab, select **Enabled**, and click on the **Clone My PC's MAC** button. Click **Apply** and **OK** to save the setting.



If you have trouble connecting to the Internet, please refer to the **Troubleshooting** section at the end of this guide.

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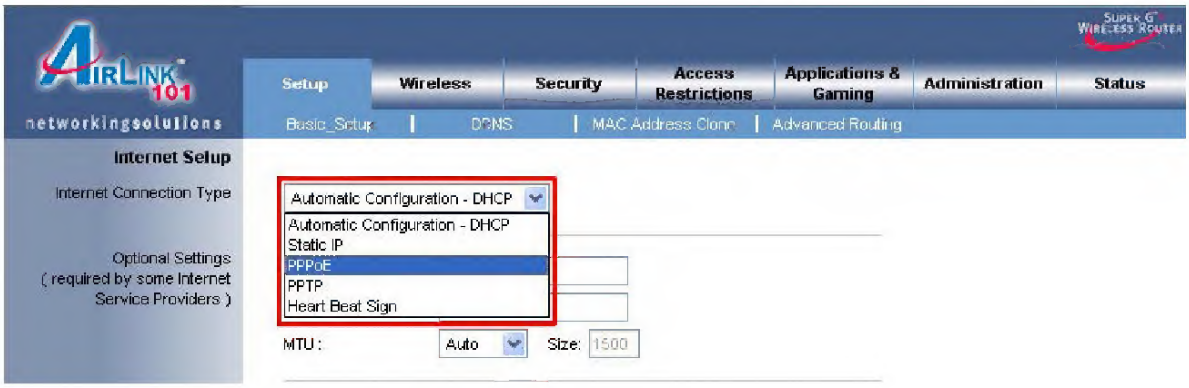
DSL

For DSL users, follow the steps below to configure the router.

Step 1 Select **PPPoE** from the drop-down menu.



Step 2 Enter your username and password provided by your ISP.

Note: Depending on the ISP, you may need to include the domain name with your username.

Example: **username@sbcglobal.net**

Step 3 Click **Apply** and **OK** to save the setting.

If you have trouble connecting to the Internet, please refer to the **Troubleshooting** section at the end of this manual.

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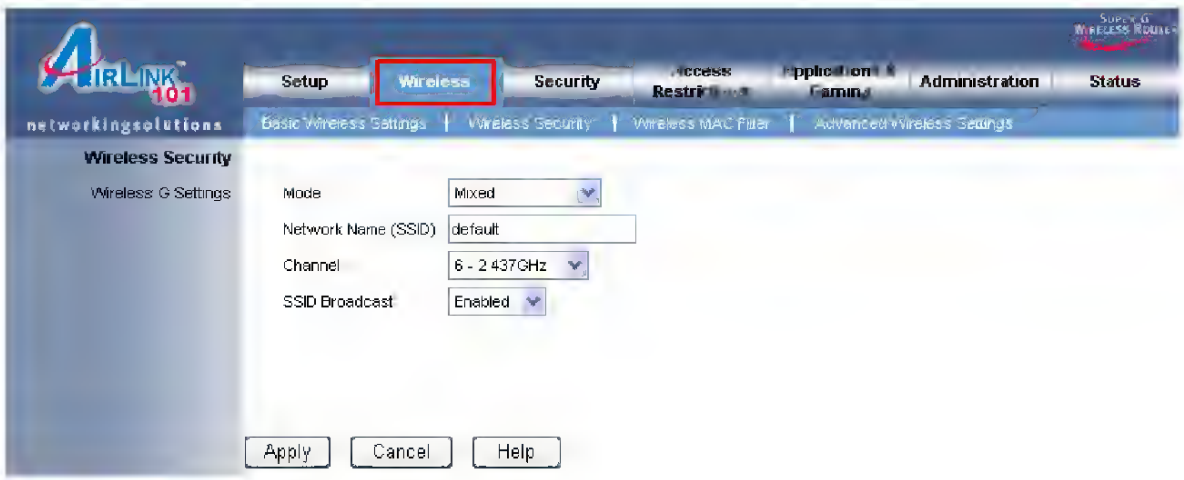
5. Connecting to the Router Wirelessly

Below are the default wireless settings of the router. You must configure your wireless network card to the same settings in order to establish a wireless connection to the router. Please refer to your wireless network card's manual on how to configure these settings.

SSID: **default**
Operating Mode: **Infrastructure**
Authentication: **Open System**
Channel #: **6**
WEP: **disabled**

If you want to change the router's wireless settings, log in to the router and select the **Wireless** tab. Be sure to click **Apply** and **OK** to save the setting.



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6. Web Configuration Utility

This router has a built-in web configuration utility that you can use to configure the router's settings. Simply log in to the router using your computer's web browser.

6.1 Setup

6.1.1 Basic Setup

This is the default screen when you log in to the router's web configuration utility. You can setup your Internet connection here as well as configuring the DHCP settings and selecting your Time Zone.

Remember to click **Apply** and **OK** to save your changes.

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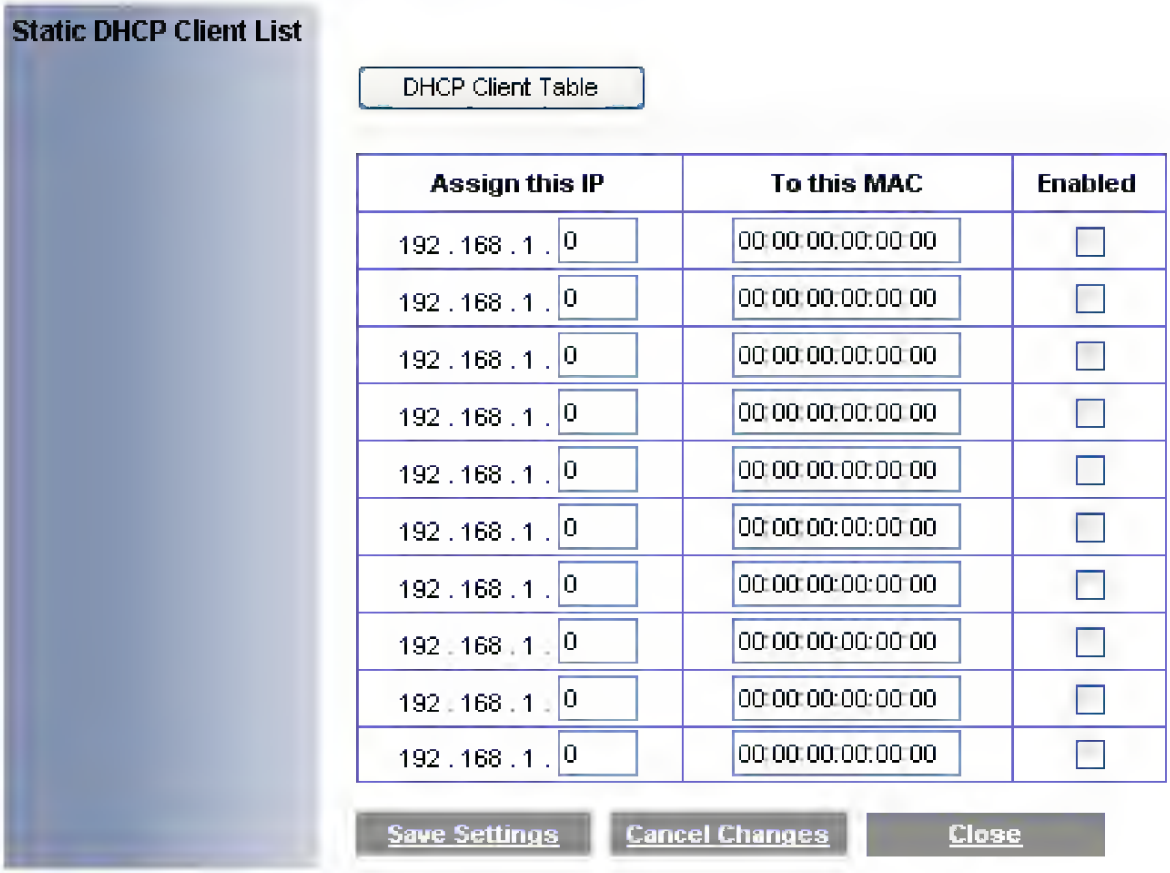
Assigning Static IP Address

If you want to assign a static IP Address to one of the computers in your network, click on the **Assign Static DHCP** button.



Step 1 Enter the Static IP Address in the **Assign this IP** field.

Step 2 Enter the MAC address of the corresponding computer in the **To this MAC** field.

Step 3 Check the **Enabled** box.

Step 4 Click **Save Settings**.

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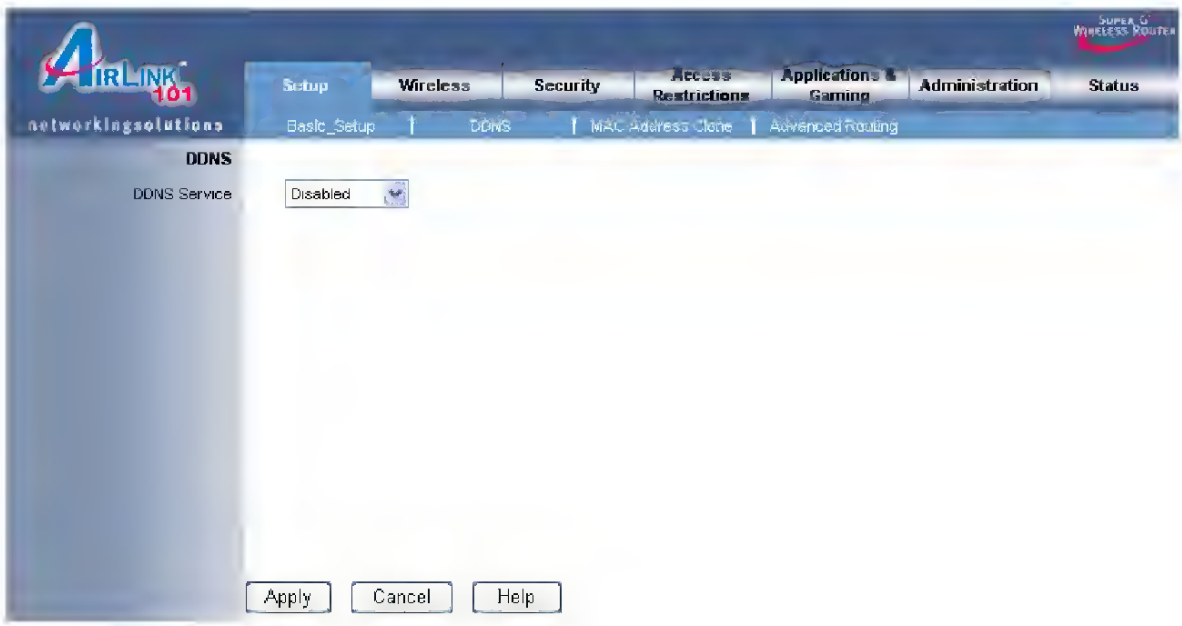
6.1.2 DDNS

Dynamic DNS (DDNS) allows any user who wishes to access your server to reach it by a registered DNS name instead of an IP address. Before you enable **DDNS**, you need to register an account with one of the DDNS providers listed in the drop-down menu.



To Enable DDNS, select the DDNS provider you have registered with and enter the required fields. Click **Apply** and **OK** to save the setting.

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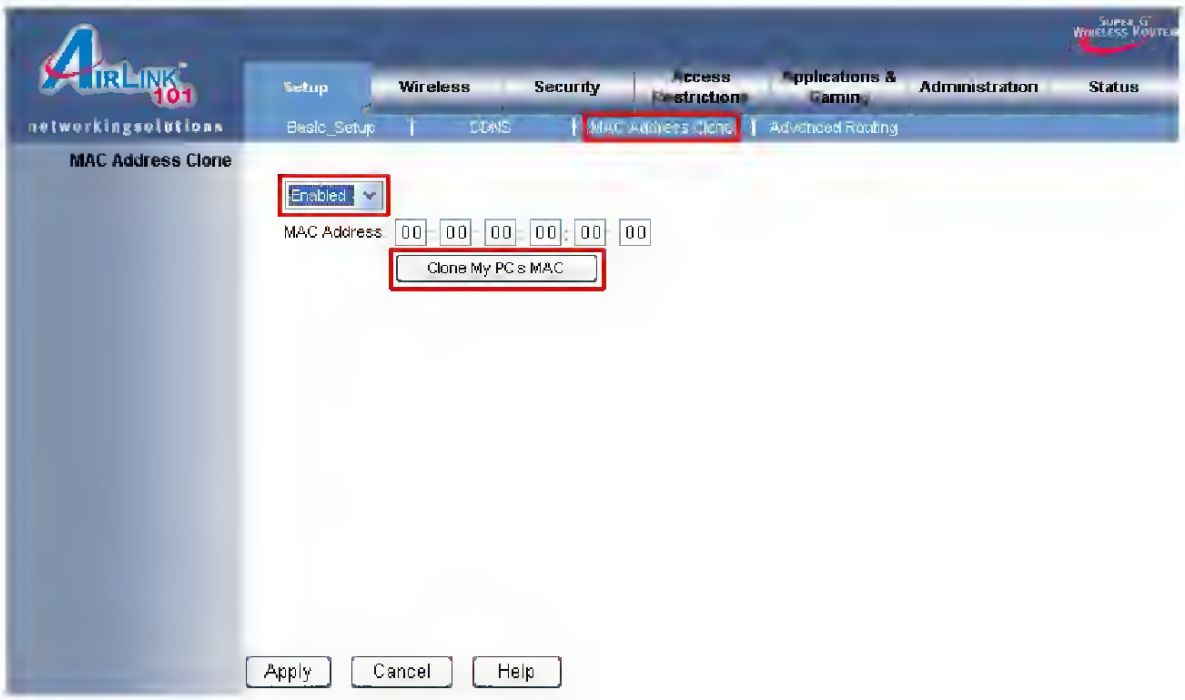
6.1.3 MAC Address Clone

Some ISPs require a registered MAC address to access the Internet. You can use the following steps to clone your PC's registered MAC address to access the Internet.



Step 1 Select **Enabled** from the drop-down menu.

Step 2 Click the **Clone My PC's MAC** button.

Step 3 Click **Apply** and **OK** to save the setting.

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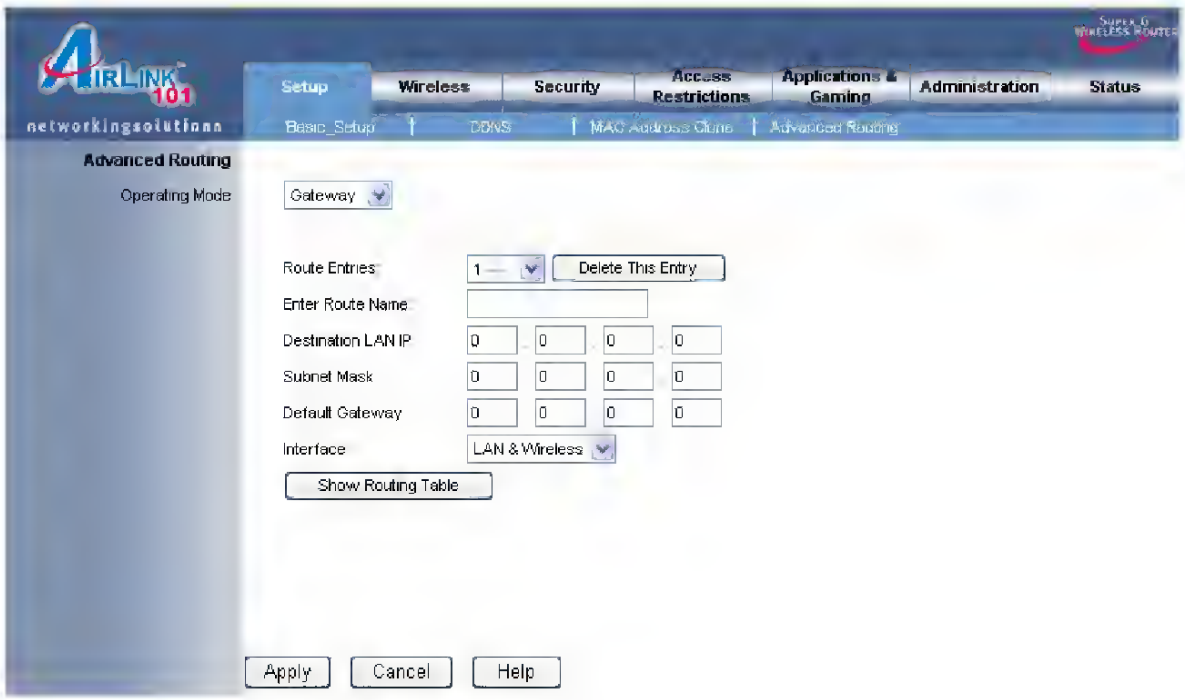
6.1.4 Advanced Routing

You can configure your own static routing table using the Advanced Routing function.



To see the current routing table, click on **Show Routing Table** button.

Be sure to click **Apply** and **OK** to save each entry.

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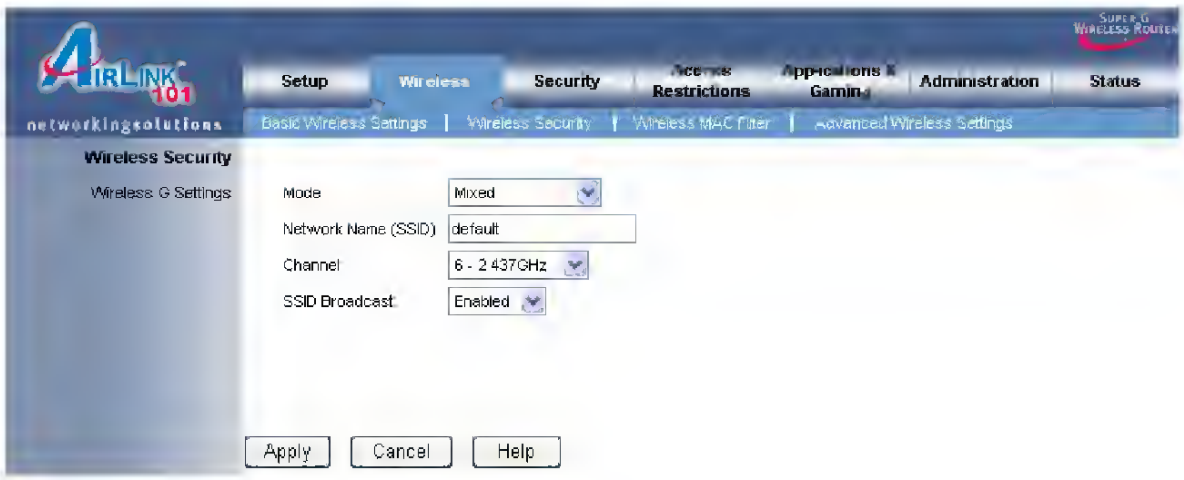
6.2. Wireless

6.2.1 Basic Wireless Settings

You can configure the router's basic wireless settings on this screen.



Mode: Choose from Wireless-G only, Super G, Mixed, Wireless-B only, or Disabled to disable the Wireless function.

Network Name (SSID): You can change the router's SSID in this field. Once you have changed the SSID, your network clients need to re-connect themselves using the new SSID.

Channel: Select the desired channel. All the network clients need to be using the same channel.

SSID Broadcast: Choose to enable or disable the broadcasting of your SSID.

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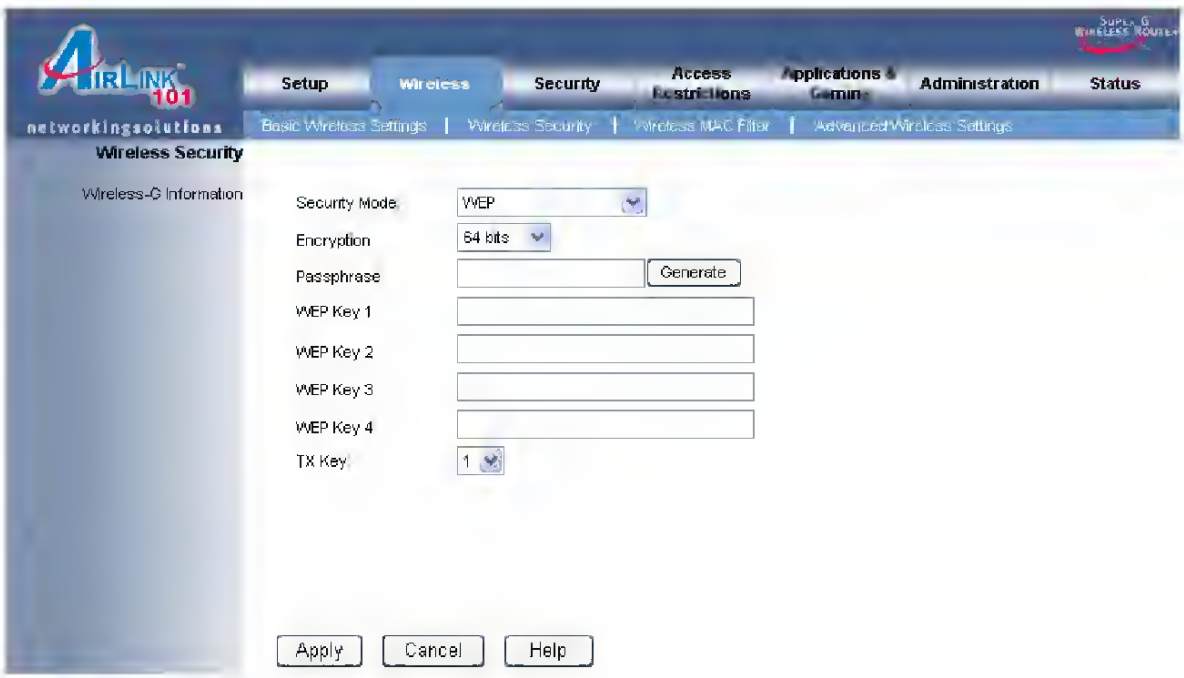
6.2.2 Wireless Security

You can configure wireless security such as WEP or WPA encryption on this screen.

Note: It is recommended that you use WPA encryption over WEP if your wireless clients support WPA. All of the wireless clients must use the same security settings in order to connect to the router.

WEP

To enable WEP, select **WEP** from the **Security Mode**.



Encryption: Choose from **64 bits** or **128 bits**

Passphrase: You can enter a passphrase and click on the **Generate** button and the router will automatically generate four WEP keys for you.

WEP Key 1 – 4: Manually assign a passphrase for each key. If you selected **64 bits** encryption, enter **10** HEX characters (0-F) for each key. If you selected **128 bits** encryption, enter **26** HEX characters (0-F) for each key.

TX Key: Select a key to be the active key.

Click **Apply** and **OK** to save the setting.

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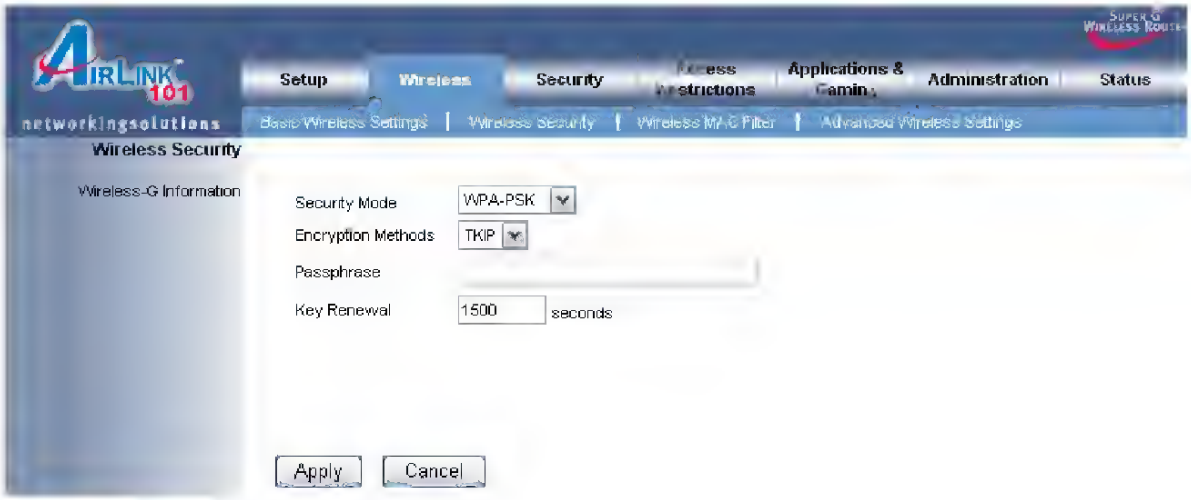
WPA

To enable WPA, select **WPA-PSK** or **WPA2-PSK** from the **Security Mode**.



Encryption Methods: Select either **TKIP** or **AES** as the encryption method.

Passphrase: Enter a passphrase between 8 to 63 characters long.

Key Renewal: Enter the desired key renewal time in seconds.

Click **Apply** and **OK** to save the setting.

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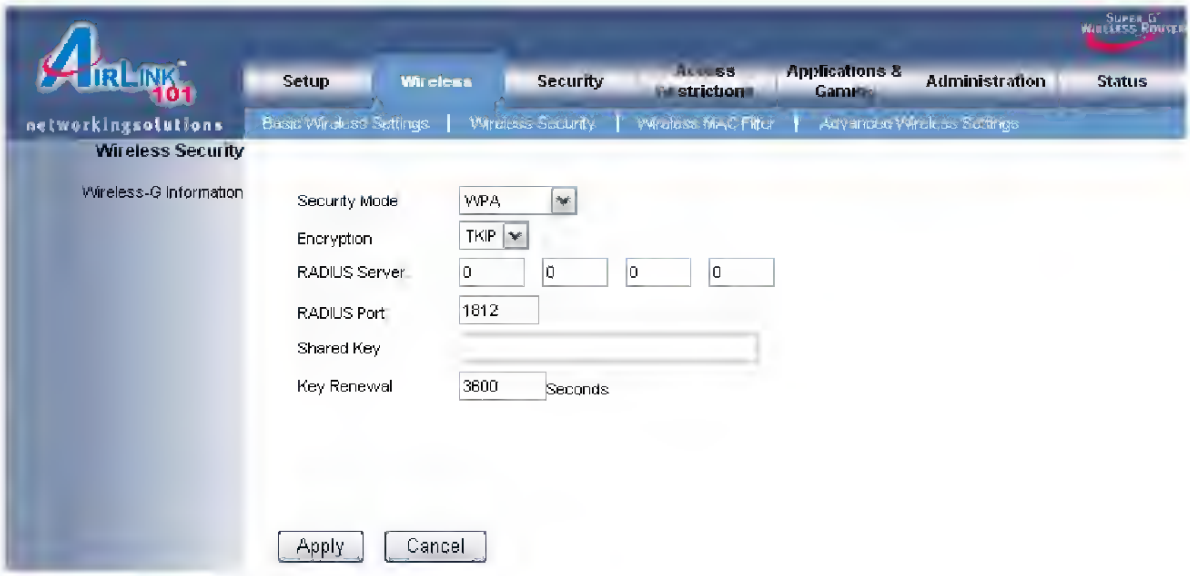
WPA with RADIUS

If you are using a RADIUS server in your network for authentication, you may choose **WPA** or **WPA2** from the **Security Mode**.



Encryption Methods: Select either **TKIP** or **AES** as the encryption method.

RADIUS Server: Enter the IP Address of your RADIUS server.

RADIUS Port: Enter the port number of your RADIUS server.

Shared Key: Enter the shared key.

Key Renewal: Enter the desired key renewal time in seconds.

Click **Apply** and **OK** to save the setting.

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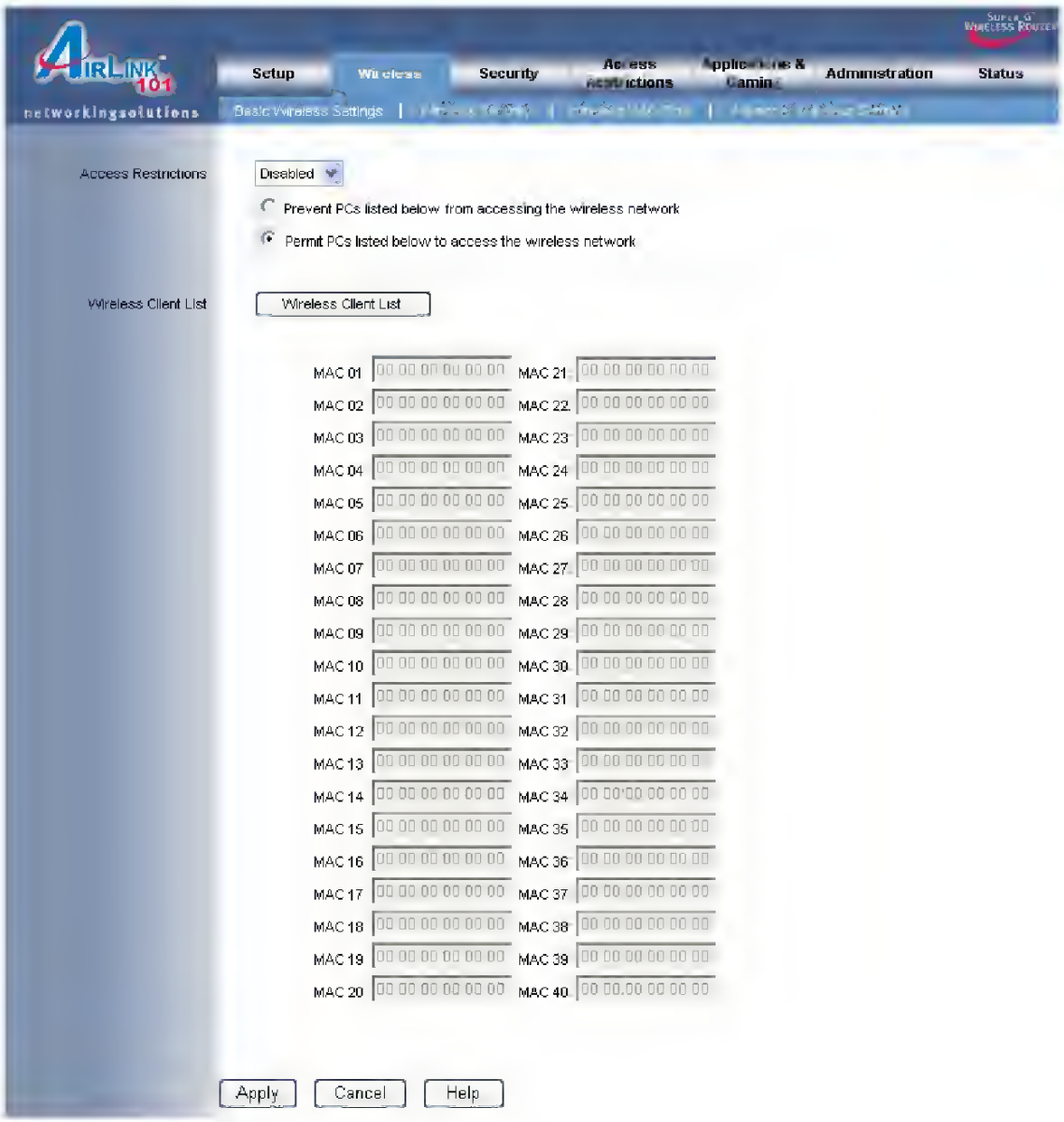
6.2.3 Wireless MAC Filter

You can restrict certain wireless clients from accessing the router by specifying their MAC address and enabling access restriction.



Select **Enabled** from the drop-down menu and choose whether the specified wireless clients will be prevented or permitted to access the wireless network. Enter their MAC address in the fields below and click **Apply** and **OK** to save the setting.

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6.2.4 Advanced Wireless Settings

You can configure various advanced wireless settings on this screen.

Click **Apply** and **OK** to save the setting.

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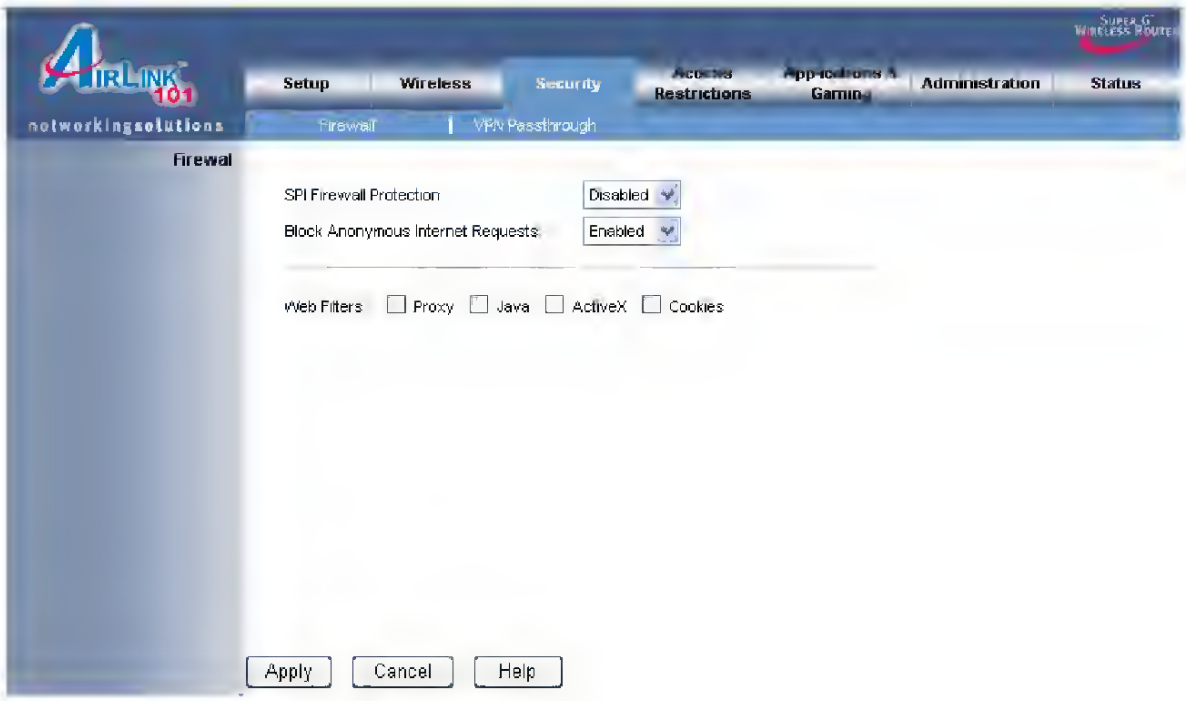
6.3 Security

6.3.1 Firewall



SPI Firewall Protection: Select to enable or disable Stateful Packet Inspection.

Block Anonymous Internet Requests: Enable or Disable.

Web Filters: You can select to filter Proxy, Java, ActiveX, and/or Cookies.

Click **Apply** and **OK** to save the setting.

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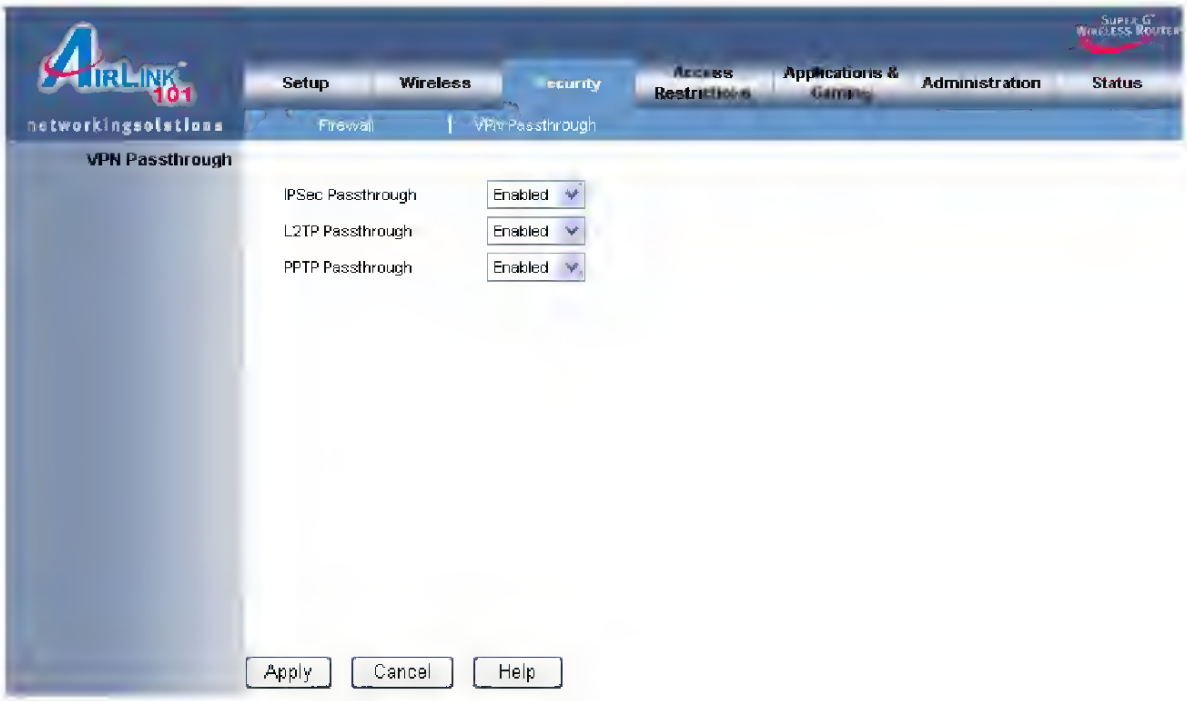
6.3.2 VPN Passthrough

You can select to enable or disable the passthrough of **IPSec**, **L2TP**, and/or **PPTP**.



Click **Apply** and **OK** to save the setting.

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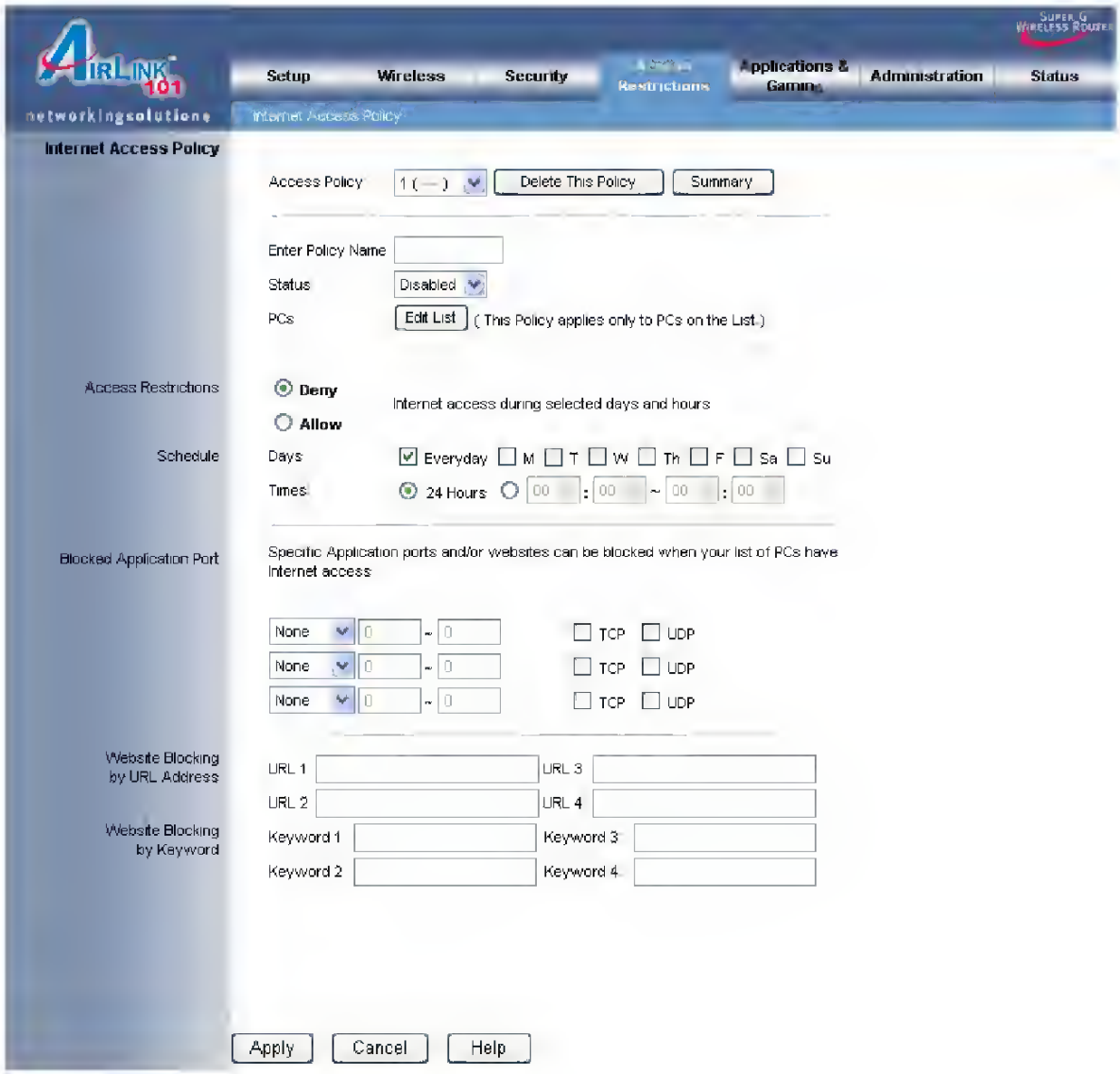
6.4 Access Restrictions

6.4.1 Internet Access Policy

You can setup policies that deny or allow specific clients to access the Internet.



Enter Policy Name: Enter a name for the policy.

Status: Choose to enable or disable the selected policy.

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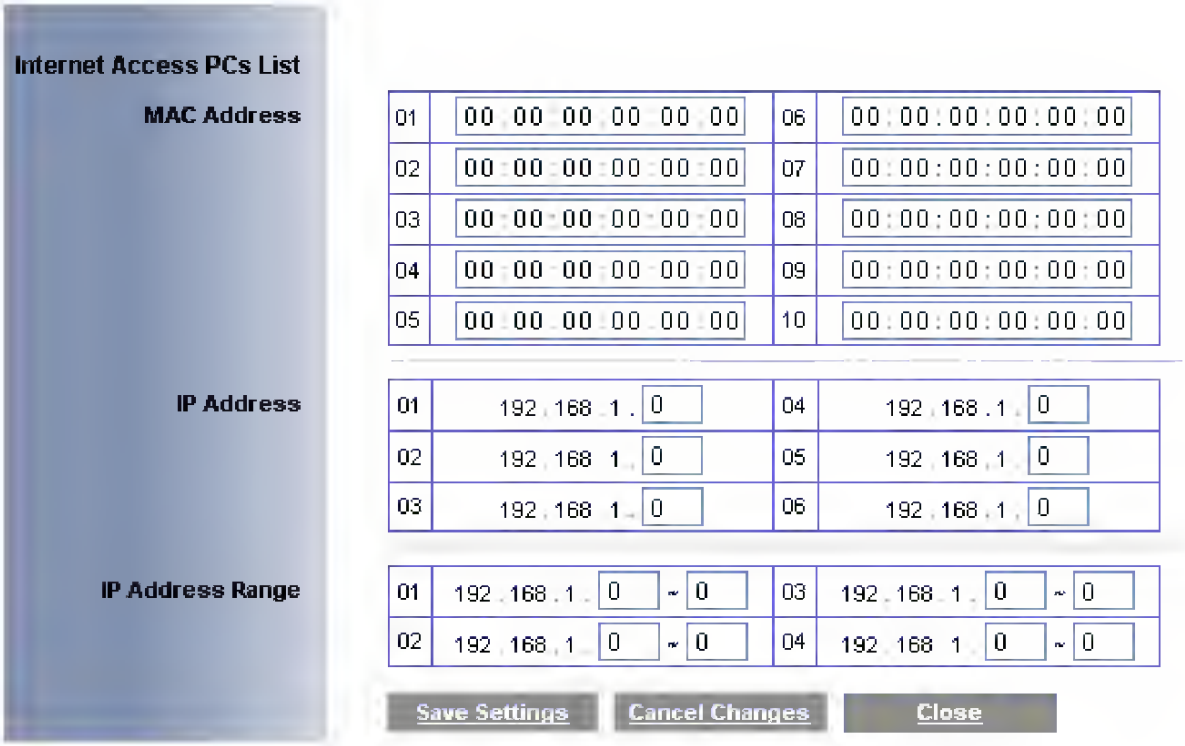
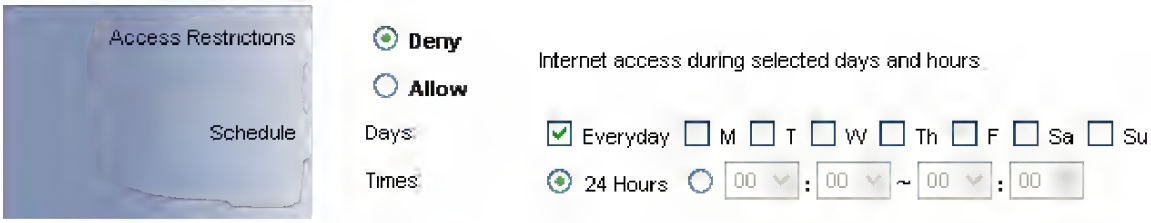
PCs: Click on the **Edit List** button to specify the network clients. Policy only applies to the PCs that are in the list.



You can specify each client by its MAC Address or IP Address. You can also specify a group of clients by entering their IP Address Range. Once you have specified all the clients, click **Save Settings**.

Access Restrictions: Select to **Deny** or **Allow** the specified clients to access the Internet by **Day** and **Time**.



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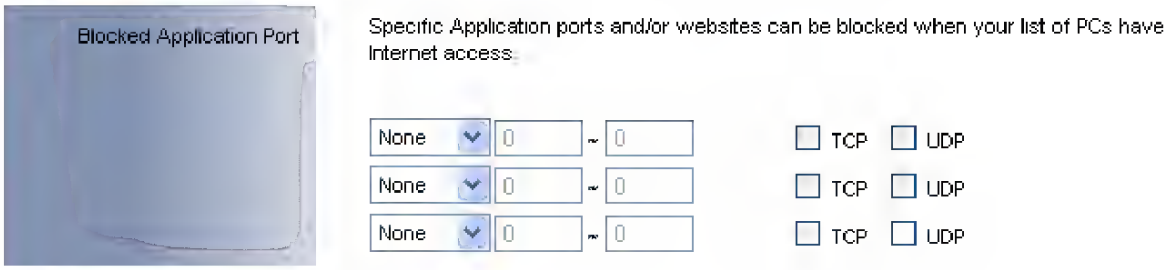
Blocked Application Port

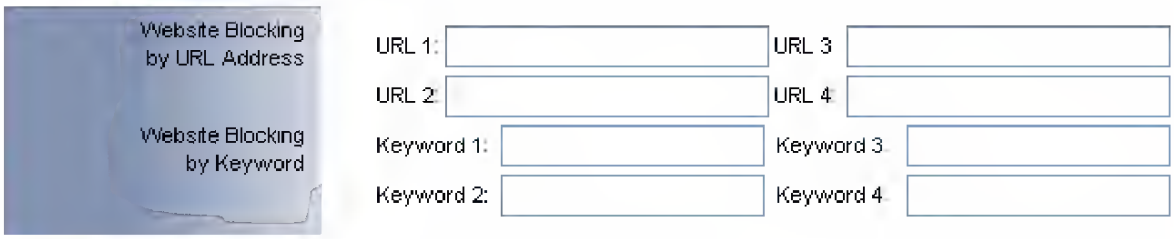
Select which application port to block, if any, when the specified PCs have Internet access.

For your convenience, 10 preset applications and their ports are listed. If you have a custom application, select **Custom** and manually enter its port number.



Website Blocking

You can block the specified clients from accessing certain websites by URL or Keyword.



Enter the URL or the Keyword you wish to block.

Click **Apply** and **OK** to save the setting.

To view all the policies, click the **Summary** button.

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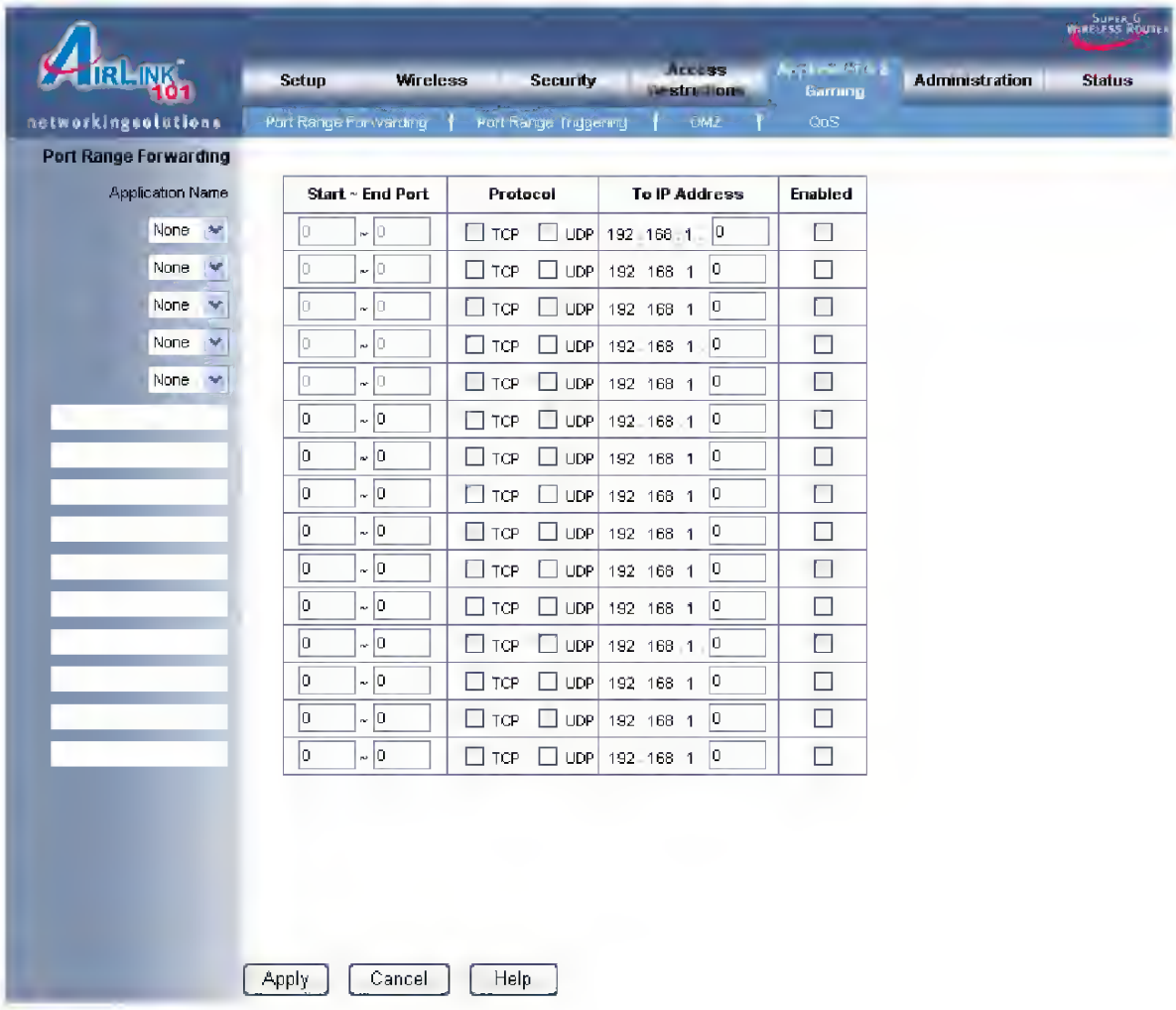
6.5 Applications & Gaming

6.5.1 Port Range Forwarding

If you want to host ftp server or online gaming, you must open up ports on the router. This page allows you to setup port forwarding for the specified applications.

Before using forwarding, you should assign static IP addresses to the designated PCs.



Click **Apply** and **OK** to save the setting.

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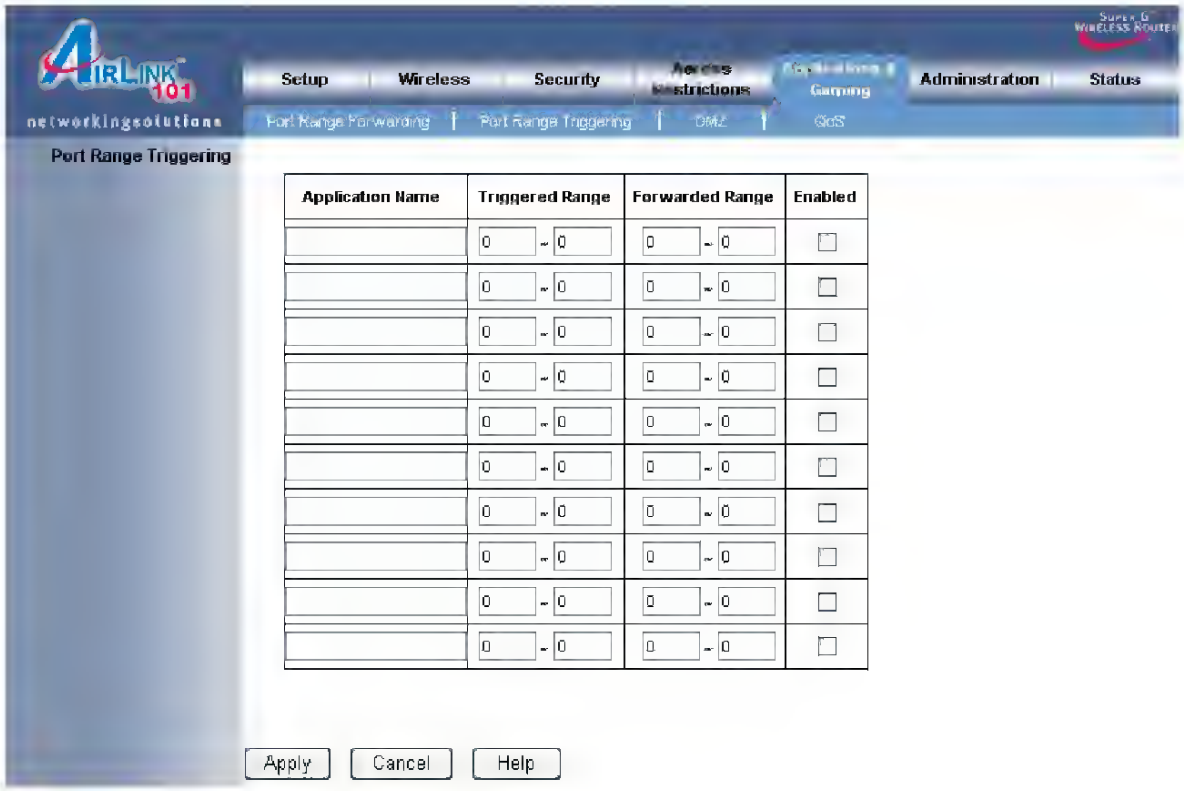
6.5.2 Port Range Triggering

Port triggering allows the router to keep track of outgoing data for specific port numbers. The router remembers which computer sends out what data, so when the requested data returns through the router, the data is sent back to the proper computer by way of IP address and port mapping rules.



Click **Apply** and **OK** to save the setting.

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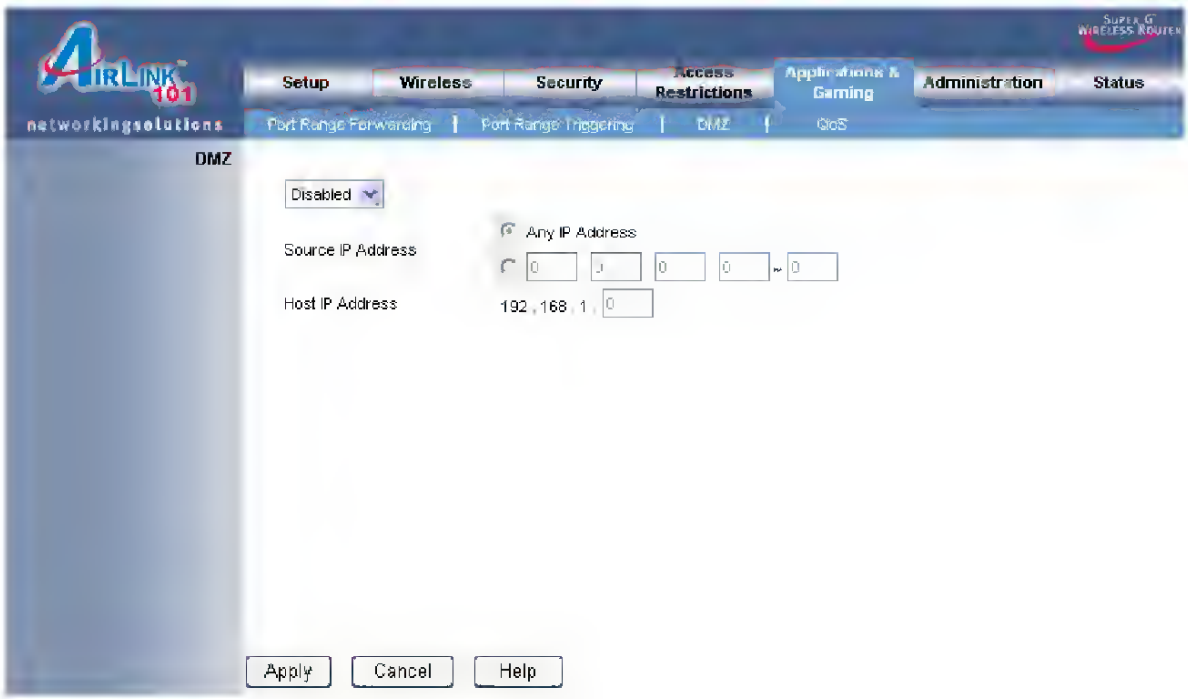
6.5.3 DMZ

DMZ (De-Militarized Zone) Host is a host without the protection of the router's firewall. It allows a computer to be exposed to unrestricted two-way communication with the Internet. You should only use this feature when the Port Forwarding function fails to make an application work.

Warning: Setting your computer as a DMZ host exposes it to various security vulnerabilities. This feature should be used only when needed.



DMZ: Select to enable or disable DMZ.

Source IP Address: Select any source IP address or specify a source IP address.

Host IP Address: Specify the host IP address.

Note: Any DMZ host should have a new static IP address assigned to it because its IP address may change when using the DHCP function.

Click **Apply** and **OK** to save the setting.

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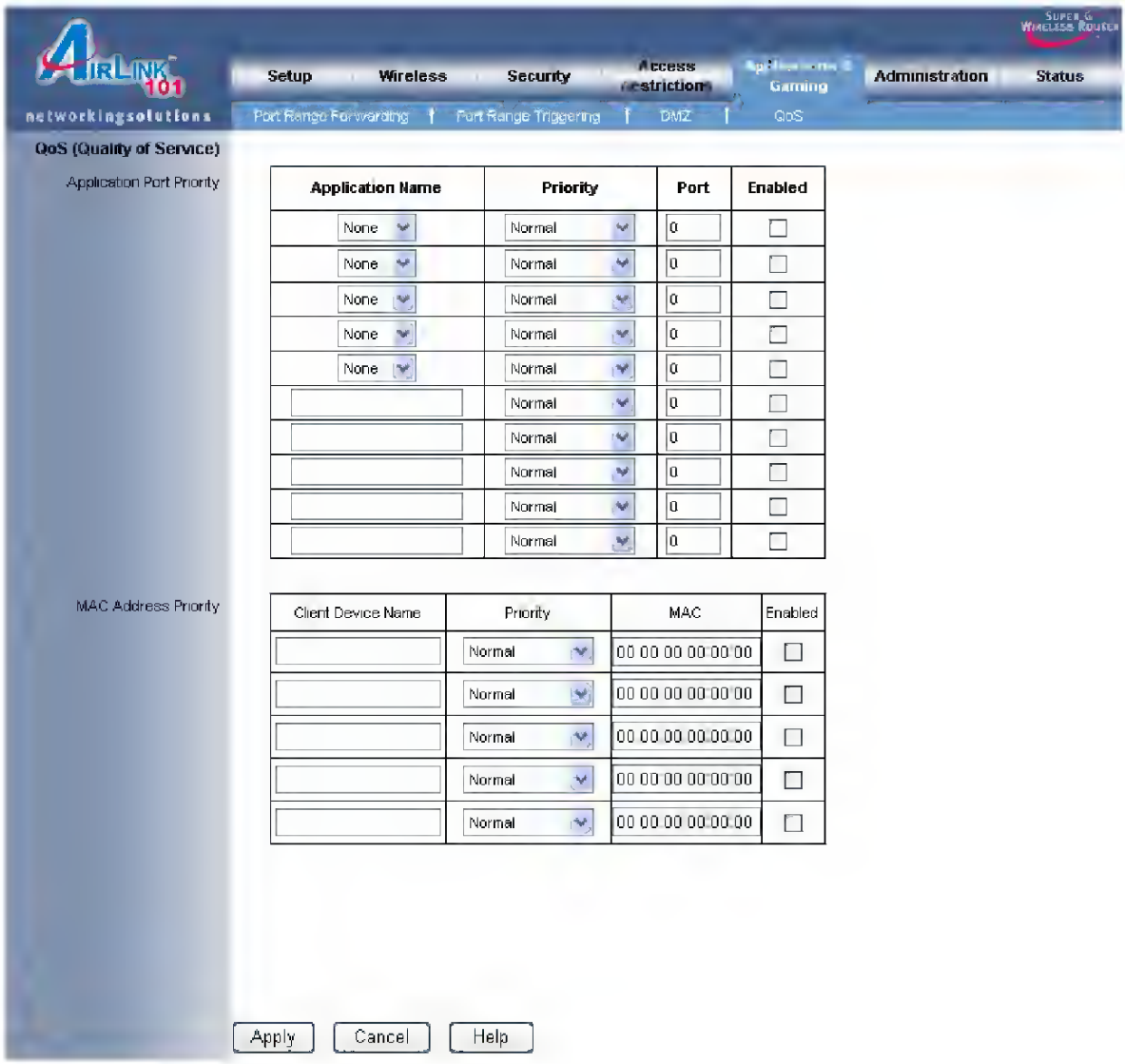
6.5.4 QoS

QoS (Quality of Service) manages information as it is transmitted and received. It ensures better service to those application with a higher priority.



Click **Apply** and **OK** to save the setting.

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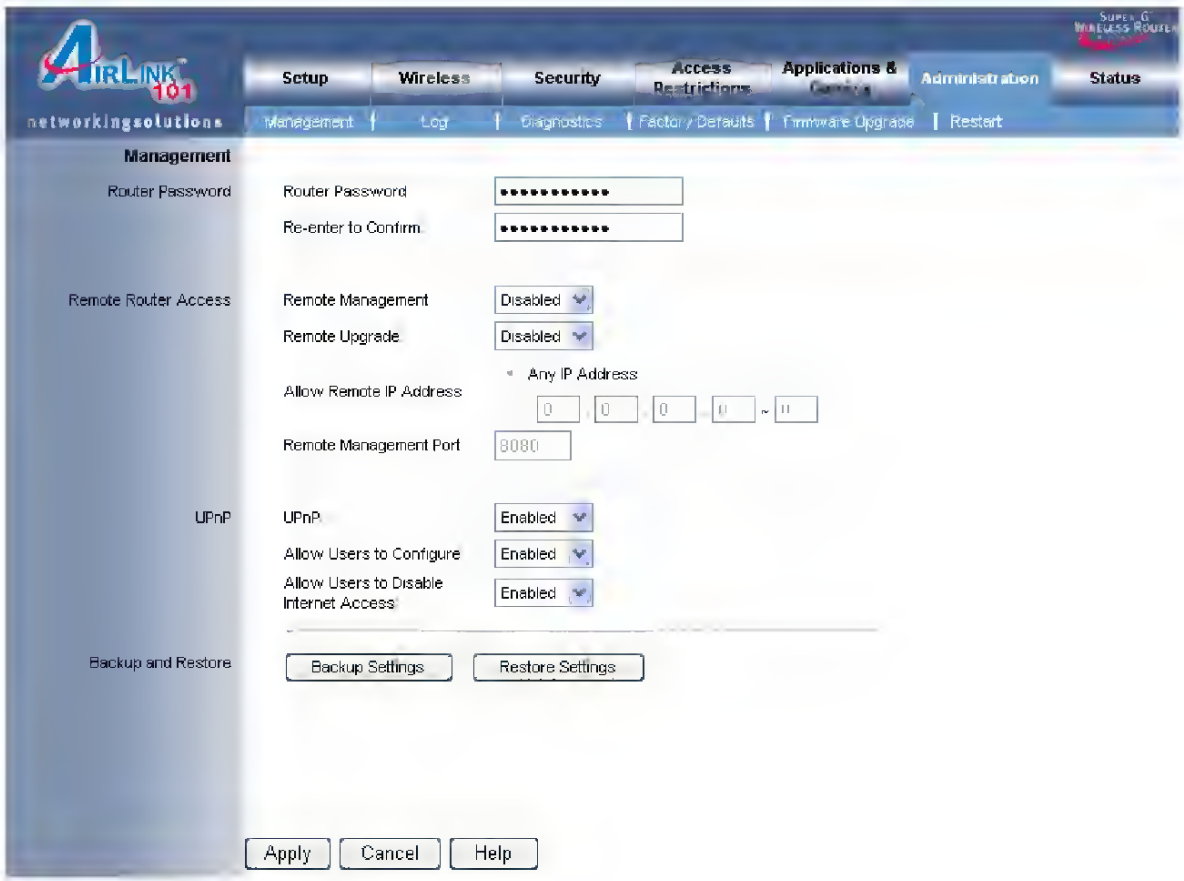
6.6 Administration

6.6.1 Management

The Management screen allows you to change the router's log in password as well as other administrative settings.



Router Password: Set the router's log in password.

Remote Router Access: Select to enable or disable remote management/upgrade of the router. You can allow remote management from any IP Address or a specified IP Address as well as the port number.

UPnP: Universal Plug and Play (UPnP) allows Windows Me and XP to automatically configure the router for various Internet applications, such as gaming and videoconferencing.

Backup and Restore: You can choose to backup the router's settings so that you don't have to manually configure the settings again if you reset the router to factory default.

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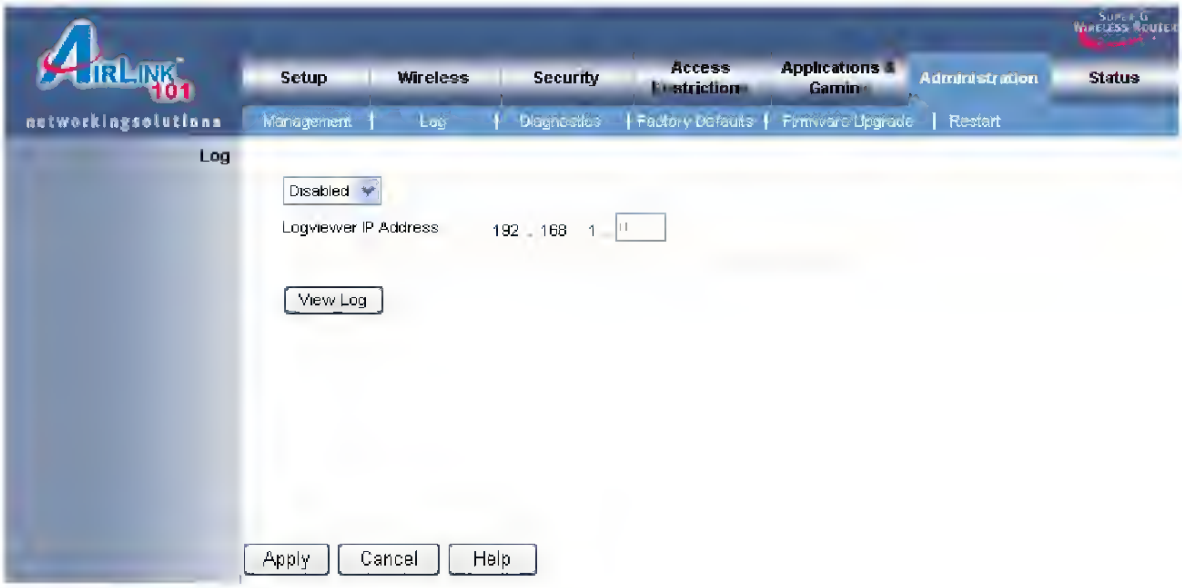
6.6.2 Log

You can choose to enable or disable logging of your network activity on this screen.



Click **Apply** and **OK** to save the setting.

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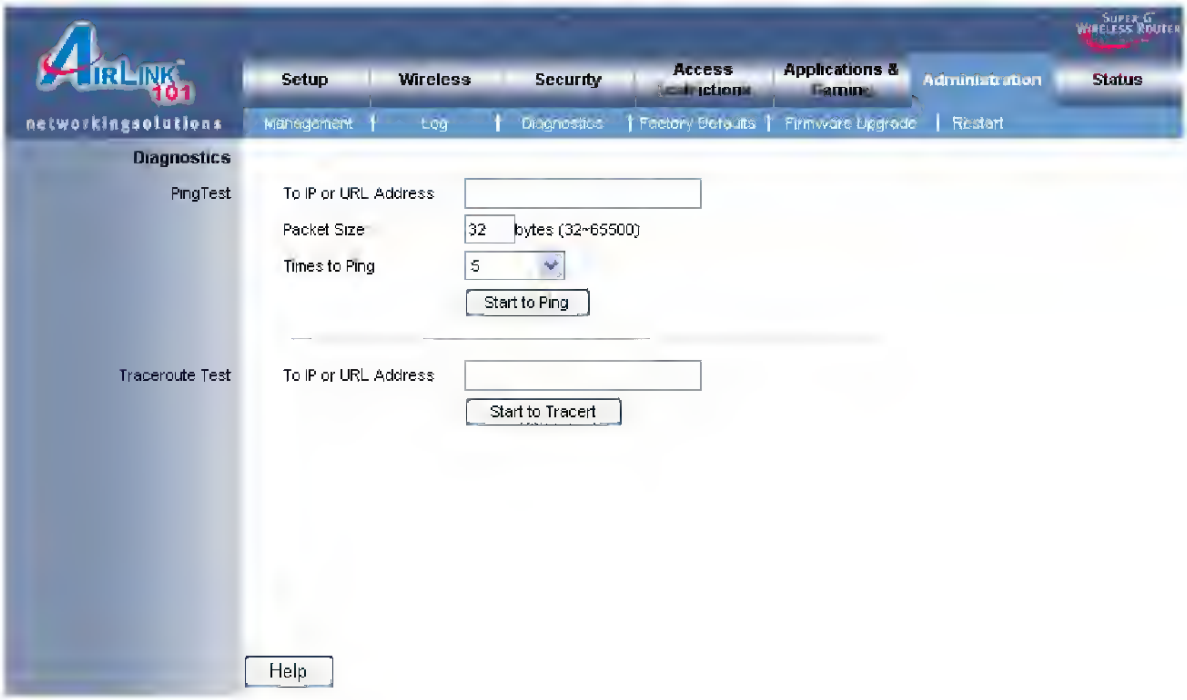
6.6.3 Diagnostics

The Diagnostics screen allows you to perform Ping and Traceroute tests.



Ping Test: Enter the IP or URL Address you wish to ping and click **Start to Ping**.

Traceroute: Enter the IP or URL Address you wish to trace and click **Start to Tracer**.

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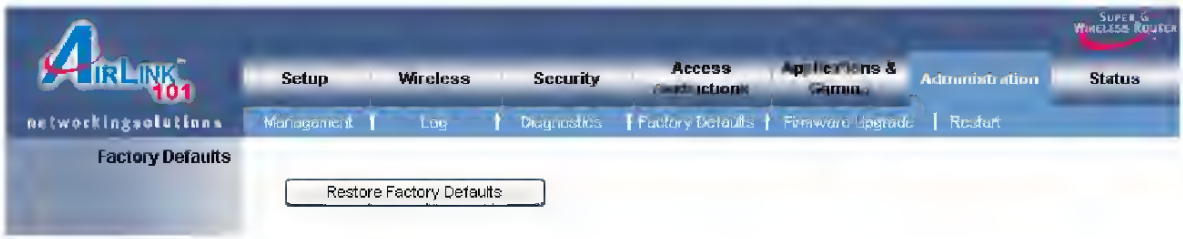
6.6.4 Factory Defaults

The Factory Defaults screen allows you to set all the router's settings to the factory default.



Click on the **Restore Factory Defaults** button to restore all the settings to default.

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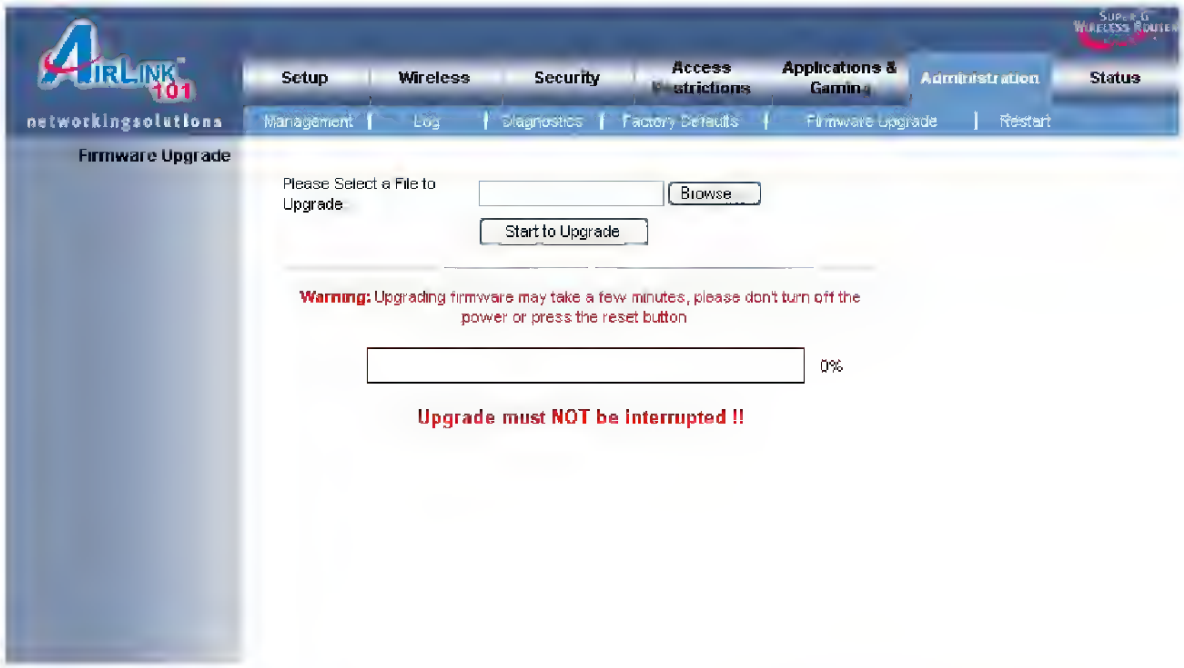
6.6.5 Firmware Upgrade

The Firmware Upgrade screen allows you to upgrade the router's firmware.



You must download and unzip the new firmware first from www.airlink101.com

Click on **Browse** to browse to the new firmware, and click **Start to Upgrade**.

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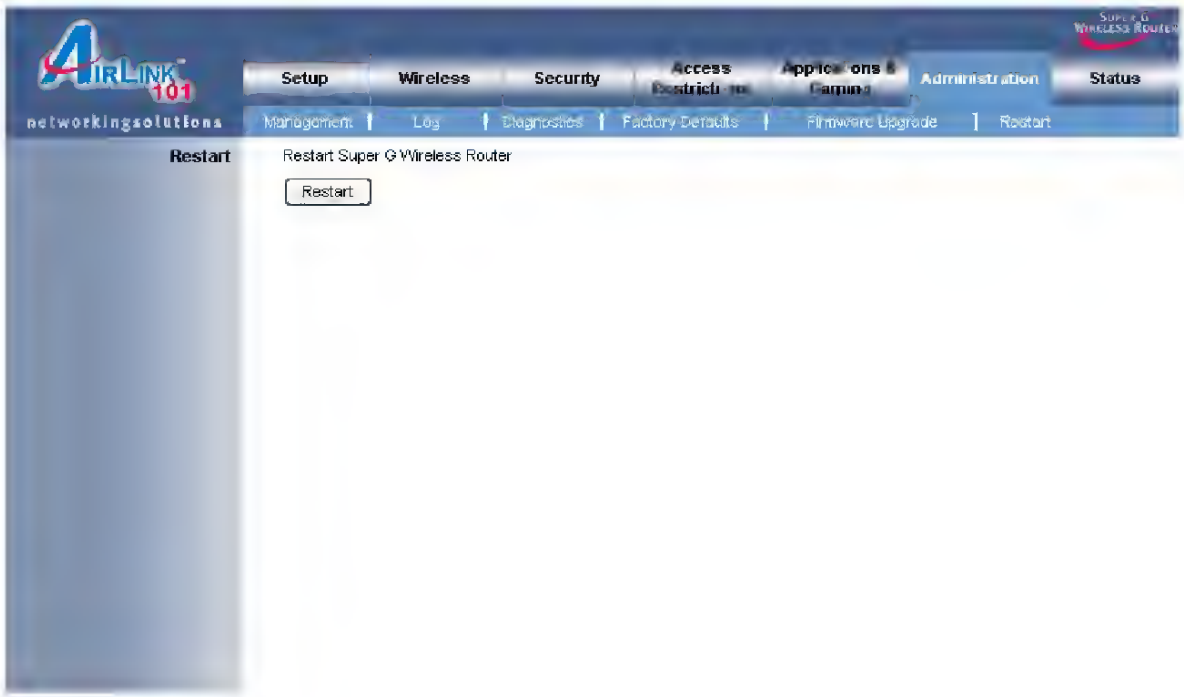
6.6.6 Restart

The Restart page allows you to restart the router without restoring the settings to factory default.



Click on the **Restart** button to restart the router.

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6.7 Status

6.7.1 Router

The Router screen displays various status of the router including the firmware version.

Click on the **Refresh** button to reload the screen.

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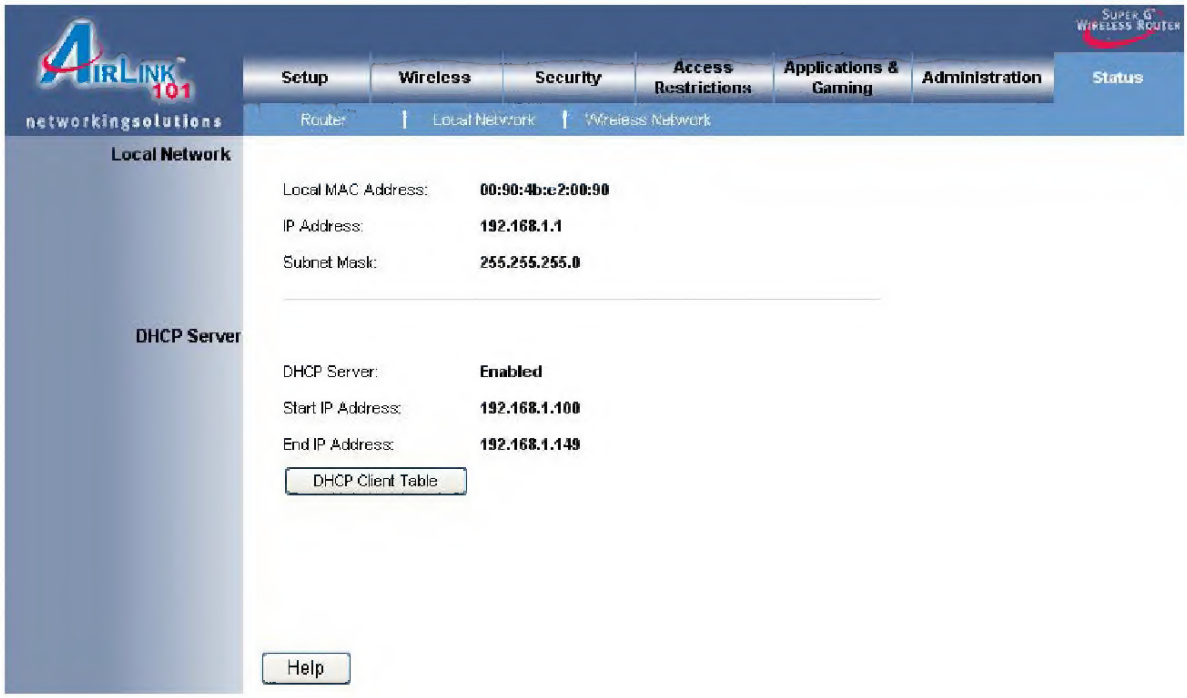
6.7.2 LAN

The LAN screen displays various status about your Local Area Network.



Click on the **DHCP Client Table** to display a list of all the DHCP clients in your network.

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6.7.3 Wireless Network

The Wireless Network screen displays various status about your wireless network.

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7. Troubleshooting

If you have trouble connecting to the Internet, try the following steps.

Step 1 Power off the Cable/DSL modem, router, and computer and wait for **5 minutes**.

Step 2 Turn on the Cable/DSL modem and wait for the lights on the modem to settle down.

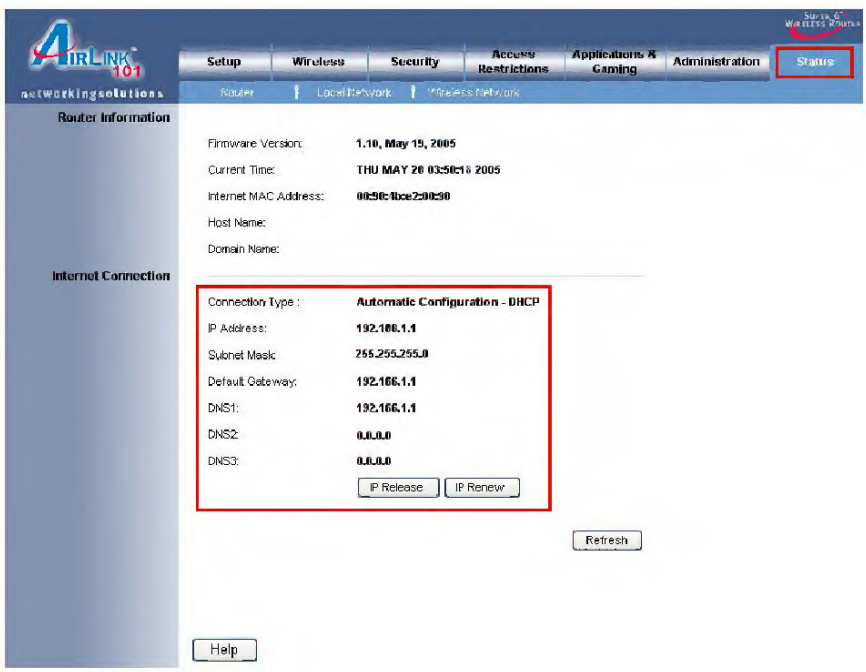
Step 3 Turn on the router and wait for the lights on the router to settle down.

Step 4 Turn on the computer.

Step 5 Reconfigure the router as described in **Section 3**.

Step 6 Log in to the router and select the **Status** tab.

Step 7 Verify that the **IP Address**, **Default Gateway**, and at least one of the **DNS** fields have valid numbers assigned to them (instead of all 0's).



If you see all 0's, click on the **IP Renew** button (for Cable Modem users) or the **Connect** button (for DSL users).

If each field has a valid number assigned, the router is connected to the Internet.

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Technical Support

E-mail: support@airlink101.com

Toll Free: 1-888-746-3238

Web Site: www.airlink101.com

*Super G™ technology (108 Mbps) can only be obtained when using products with Atheros Super G™ chipset

*Theoretical maximum wireless signal rate based on IEEE standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, mix of wireless products used, radio frequency interference (e.g., cordless telephones and microwaves) as well as network overhead lower actual data throughput rate.

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